

WE CLAIM:

1. A method for providing an active ticket in a mobile terminal for use by a mobile terminal user, **characterized in that**

5 at least one active ticket has a ticket characteristic that dynamically changes based on one or more states in a life cycle of the active ticket.

10 2. A method according to claim 1, wherein dynamic changes to the ticket characteristic include multimedia changes or other presentation data, including text, sound, animation, video, still pictures, or some combination thereof.

15 3. A method according to claim 1, wherein the one or more states in the life cycle include a state of being either purchased, validated, invalidated, template, pre-valid, prepared, or some combination thereof for one or more different events.

20 4. A method according to claim 1, wherein the ticket characteristic dynamically changes based on a payment by the user of the mobile terminal.

5. A method according to claim 1, wherein the ticket characteristic dynamically changes based on a predetermined time, status or combination thereof.

5 6. A method according to claim 1, wherein the ticket characteristic dynamically changes based on a predetermined or changing geographic location.

10 7. A method according to claim 1, wherein the ticket characteristic dynamically changes based on a purchase transaction between a user of the mobile terminal and a ticket service provider.

15 8. A method according to claim 1, wherein a ticket service provider provides future ticket characteristic information to the mobile terminal that determines and/or activates the ticket characteristic.

20 9. A method according to claim 8, wherein the ticket characteristic information includes ticket characteristic control data, a ticket characteristic algorithm, a new set of ticket related media or a combination thereof.

10. A method according to claim 9, wherein the ticket characteristic control data includes new control data to change the ticket characteristic algorithm or other presentation data, including new parameter values.

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11. A method according to claim 9, wherein the control data is received at a certain time and/or location, or just before the at least one active ticket is to be used.

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12. A method according to claim 9, wherein the control data is sent to only legally purchased tickets based on a respective identification code associated with a respective mobile terminal.

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13. A method according to claim 9, wherein the at least one active ticket is validated using visual or audio validation based on the ticket characteristic.

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14. A method according to claim 13, wherein the visual or audio validation is performed by either a human, or a machine, or some combination thereof.

15. A method according to claim 8, wherein the ticket service provider provides the ticket characteristic information to the mobile terminal via the Internet or a mobile network.

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16. A method according to claim 8, wherein the ticket service provider provides the ticket characteristic information to the mobile terminal using a Java-based protocol, e.g. MIDP Over-the-Air approach.

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17. A method according to claim 8, wherein the ticket service provider controls the ticket characteristic by providing a control token, including either one based on an International Mobile Equipment Identity (IMEI) or a provision based on IMEI.

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18. A method according to claim 13, wherein the ticket characteristic is an audio ticket characteristic and the audio validation is based a relative frequency change.

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19. A method according to claim 13, wherein the ticket characteristic includes an audio watermark embedded therein using a secret key.

20. A method according to claim 19, wherein the audio validation is performed by a machine that uses the secret key to detect and validate the at least one active ticket by listening to the sound thereof.

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21. A method according to claim 19, wherein the at least one active ticket is implemented using a protocol based on Mobile electronic Transactions (MeT), including the MeT ticket format.

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22. A method according to claim 21, wherein the MeT ticket format contains only a template for a pre-valid active ticket.

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23. A method according to claim 21, wherein the mobile transaction (MeT) ticket format contains valid ticket information for a valid active ticket.

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24. A method according to claim 23, wherein the valid ticket information is removed from the MeT ticket for a used active ticket.

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25. A method according to claim 1, wherein the method is implemented using an active ticket system architecture having a mobile terminal and a ticket service provider.

26. A method according to claim 25, wherein the ticket service provider includes a ticket generator responsible for generating the at least one active ticket for the mobile terminal.

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27. A method according to claim 25, wherein the ticket service provider includes a ticket issuer for delivery and updating of the at least one active ticket, or upgrading an active ticket application at the mobile terminal.

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28. A method according to claim 25, wherein the ticket service provider includes a memory device or database for ticket data and user information and logs.

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29. A method according to claim 25, wherein the mobile terminal includes a mobile active ticket application that is the active ticket installed and run on the mobile terminal.

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30. A method according to claim 25, wherein the mobile terminal includes a ticket transaction module, which could support various payment methods, including a credit or debit card, or SMS based micropayment, for terminal user's preference, for supporting ticket purchases.

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31. A method according to claim 1, wherein the at least one active ticket includes several active tickets.

32. A method according to claim 31, wherein each of the several active tickets includes several different events.

33. A method according to claim 31, wherein each active ticket includes a respective series of life cycles.

34. A method according to claim 31, wherein the ticket service provider sends commands or media to the mobile terminal using a broadcast encryption technique.

35. A method according to claim 34, wherein the broadcast encryption technique includes the following steps:

generating with a ticket issuer a root key, which can derive a number of seed keys;

distributing the seed keys to users before issuing the active ticket;

broadcasting a command encryption by the root key to indicate which of the seed keys can be used for decryption based on data managed by the ticket service provider; and

allowing a user who is holding a valid seed key, which are allowed to decrypt the command package, to decrypt a command package and upgrade the ticket characteristic to a valid one.

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36. A method according to claim 31, wherein the ticket service provider sends commands or media to the mobile terminal using a push by request technique, including requesting payment or other measures from the mobile terminal user to upgrade the ticket characteristic.

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37. A method according to claim 36, wherein the push by request technique includes the following steps:

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providing in an active ticket application a ticket provider's public key certificate;

signing any command by the ticket service provider and verifying the same by the active ticket application; and

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changing the ticket status of an indicated active ticket based on the content inside a valid command.

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38. A method according to claim 31, wherein the mobile terminal sends the ticket service provider a short message service signal containing payment data in order to make the payment.

39. A method according to claim 8, wherein the ticket characteristic information includes a URL address where to download a ticket file containing information related to the ticket characteristic.

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40. A method according to claim 39, wherein the mobile terminal saves the ticket file.

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41. A method according to claim 39, wherein the mobile terminal saves information related to how/where to start an active ticket application.

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42. A mobile terminal for providing an active ticket for use by a mobile terminal user, **characterized in that** the mobile terminal includes a mobile active ticket application module that provides at least one active ticket having a ticket characteristic that dynamically changes based on one or more states in a life cycle of the active ticket.

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43. A mobile terminal according to claim 42, wherein dynamic changes to the ticket characteristic include multimedia changes or other presentation data, including text, sound, animation, video, still pictures, or some combination thereof.

44. A mobile terminal according to claim 42, wherein
the one or more states in the life cycle include a state
of being either purchased, validated, invalidated,
template, pre-valid, prepared, or some combination
5 thereof for one or more different events.

45. A mobile terminal according to claim 42, the
ticket characteristic dynamically changes based on a
payment by the user of the mobile terminal.

10 46. A mobile terminal according to claim 42, wherein
the ticket characteristic dynamically changes based on a
predetermined time, status or combination thereof.

15 47. A mobile terminal according to claim 42, wherein
the ticket characteristic dynamically changes based on a
predetermined or changing geographic location.

20 48. A mobile terminal according to claim 42, wherein
the ticket characteristic dynamically changes based on a
purchase transaction between a user of the mobile
terminal and a ticket service provider.

49. A ticket service provider for communicating with a mobile terminal, **characterized in that**

the ticket service provider includes a ticket issuer module that provides to a mobile terminal either at least one active ticket or control information for activating or deactivating at least one active ticket for use by a mobile terminal user, the at least one active ticket having a ticket characteristic that dynamically changes based on one or more states in a life cycle of the active ticket.

50. A ticket service provider according to claim 49, wherein dynamic changes to the ticket characteristic include either multimedia changes or other presentation data, including text, sound, animation, video, still pictures; or a movement of the mobile terminal, an emission of light therefrom, a change of shape; or some combination thereof.

51. A ticket service provider according to claim 49, wherein the one or more states in the life cycle include a state of being either purchased, validated, invalidated, template, pre-valid, prepared, or some combination thereof for one or more different events.

52. A ticket service provider according to claim 49,
wherein the ticket characteristic dynamically changes
based on a payment by the user of the mobile terminal.

5 53. A ticket service provider according to claim 49,
wherein the ticket characteristic dynamically changes
based on a predetermined time, status or combination
thereof.

10 54. A ticket service provider according to claim 47,
wherein the ticket characteristic dynamically changes
based on a predetermined or changing geographic location.

15 55. A ticket service provider according to claim 47,
wherein the ticket characteristic dynamically changes
based on a purchase transaction between a user of the
mobile terminal and a ticket service provider.

20 56. A wireless network having a ticket service
provider and a mobile terminal, **characterized in that**
the mobile terminal receives from the ticket service
provider either at least one active ticket or control
information for activating or deactivating at least one
active ticket for use by a mobile terminal user, the at
25 least one active ticket having a ticket characteristic
that dynamically changes based on one or more states in a

life cycle of the active ticket.

57. A wireless network according to claim 56,
wherein dynamic changes to the ticket characteristic
5 include multimedia changes or other presentation data,
including text, sound, animation, video, still pictures,
or some combination thereof.

58. A wireless network according to claim 56,
10 wherein the one or more states in the life cycle include
a state of being either purchased, validated,
invalidated, template, pre-valid, prepared, or some
combination thereof for one or more different events.

59. A wireless network according to claim 56,
15 wherein the ticket characteristic dynamically changes
based on a payment by the user of the mobile terminal.

60. A wireless network according to claim 56,
20 wherein the ticket characteristic dynamically changes
based on a predetermined time, status or combination
thereof.

61. A wireless network according to claim 56,
25 wherein the ticket characteristic dynamically changes
based on a predetermined or changing geographic location.

62. A wireless network according to claim 56,
wherein the ticket characteristic dynamically changes
based on a purchase transaction between a user of the
mobile terminal and a ticket service provider.

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63. A method according to claim 1, wherein the
ticket characteristic dynamically changes only after some
user interaction based on an embedded algorithm in the
active ticket and possible control data received from a
ticket issuer.

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64. A mobile terminal according to claim 42, wherein
the ticket characteristic dynamically changes only after
some user interaction based on an embedded algorithm in
the active ticket and possible control data received from
a ticket issuer.

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65. A ticket service provider according to claim 47,
wherein the ticket characteristic dynamically changes
only after some user interaction based on an embedded
algorithm in the active ticket and possible control data
received from a ticket issuer.

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66. A wireless network according to claim 56, wherein the ticket characteristic dynamically changes only after some user interaction based on an embedded algorithm in the active ticket and possible control data received from a ticket issuer.

67. A method according to claim 25, wherein the mobile terminal includes a centralized ticket manager for viewing and/or managing the tickets that a user has.

68. A method according to claim 1, wherein the ticket characteristic dynamically changes based on an embedded algorithm driven by a control token sent by the ticket service provider.

69. A mobile terminal according to claim 42, wherein the ticket characteristic dynamically changes based on an embedded algorithm driven by a control token sent by the ticket service provider.

70. A ticket service provider according to claim 47, wherein the ticket characteristic dynamically changes based on an embedded algorithm driven by a control token sent by the ticket service provider.

71. A mobile network according to claim 56, wherein the ticket characteristic dynamically changes based on an embedded algorithm driven by a control token sent by the ticket service provider.

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72. A method according to claim 25, wherein the ticket service provider includes a ticket inspector which may be a digital machine or human being for ticket verification on its validity and correctness.

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73. A method according to claim 1, wherein a number of ticket services support are managed at the same time or in series.

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74. A method according to claim 73, wherein one ticket service depends on a previous ticket service.